

121  
(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
5 April 2001 (05.04.2001)

PCT

(10) International Publication Number  
WO 01/22916 A2

(51) International Patent Classification<sup>7</sup>: A61K building, Queen Mary Hospital, Pokfulam Road, Hong Kong (CN).

(21) International Application Number: PCT/IB00/01393

(74) Agent: CHINA SCIENCE PATENT & TRADEMARK AGENT LTD.; 16/F, Zhongke Building, No. 22, Zhongguancun Street, Haidian District, Beijing 100080 (CN).

(22) International Filing Date:  
28 September 2000 (28.09.2000)

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
2,283,538 30 September 1999 (30.09.1999) CA

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (for all designated States except US): THE UNIVERSITY OF HONG KONG [CN/CN]; Pathology Building, Queen Mary Hospital, Pokfulam Road, Hong Kong (CN).

Published:

— Without international search report and to be republished upon receipt of that report.

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(72) Inventors; and

(75) Inventors/Applicants (for US only): NG, Mun, Hon [CN/CN]; Dept. of Microbiology, The University of Hong Kong, Pathology building, Queen Mary Hospital, Pokfulam Road, Hong Kong (CN). IM, Stanley [CN/CN]; Dept. of Microbiology, The University of Hong Kong, Pathology building, Queen Mary Hospital, Pokfulam Road, Hong Kong (CN). ZHANG, Ji-Zhong [CN/CN]; Dept. of Microbiology, The University of Hong Kong, Pathology

WO 01/22916 A2

(54) Title: NOVEL HEV ANTIGENIC PEPTIDE AND METHODS

(57) Abstract: A highly immunoreactive viral peptide, pE2, is disclosed which is derived from the carboxy-terminal end region of ORF2 region of the hepatitis E virus (HEV) genome. A unique feature of the novel pE2 peptide is that it possesses conformational antigenic determinants which are only exposed when monomers of the peptide associate with one another through non-covalent interactions to naturally form homodimers. The novel pE2 peptide is proven to be highly reactive with sera from patients having current or past infection with HEV which suggests that the homodimer may mimic certain structural features of the HEV capsid protein. Furthermore, the antigenic activity of the pE2 peptide is strictly conformational in nature and therefore, exhibits immunochemical reactivity only when the peptide exists in a dimeric form. Consequently, the antigenic activity is lost upon dissociation of the dimers, but the activity is restored when the monomers reassociate to form dimers. Moreover, diagnostic methods useful in detecting and diagnosing HEV infection, and the use of a vaccine composition effective in preventing hepatitis E virus infection in which the novel pE2 peptide is utilized are also disclosed.